CLAIMS

What is claimed is:

1. A refrigeration cooler comprising:

a refrigeration unit having a back side, a front side, lower side and an upper side, an inclined surface extending downwardly adjacent and towards the front side, the upper side includes a first set of an evaporator inlet opening and an evaporator cool air exhaust opening;

a cabinet having a compartment for receiving the refrigeration unit, a back side, a front side, a lower side, and an upper side, the compartment includes a compartment opening, a lower support surface and an upper surface, the lower support surface is adapted for receiving the refrigeration unit and includes an inclined surface extending upwardly adjacent and towards the back side, the upper surface includes a second set of an evaporator inlet opening and an evaporator cool air exhaust opening;

a seal secured around a perimeter of the evaporator inlet opening and the evaporator cool air exhaust opening of either the first set or the second set, whereby when the refrigeration unit is slid into the compartment opening, along the lower support surface and below the upper surface, the seal is in an uncompressed state, and after further insertion into the compartment, the back side of the refrigeration unit engages the inclined surface of the cabinet, and the front side of the cabinet engages the inclined surface of the refrigeration unit, causing the refrigeration unit to be lifted and thus compressing the seal so as to seal the first set of openings with the second set of openings.

2. The refrigeration cooler of claim 1, wherein the seal is secured around the perimeter of the first set of openings, whereby when the refrigeration unit is lifted within the cabinet, the seal is compressed against the upper surface of the cabinet.

3. The refrigeration cooler of claim 1, wherein the lower side of the refrigeration unit includes a first inclined surface and a second inclined surface, each inclined surface extending downwardly, adjacent and towards the front side, the first inclined surface located at the left side and the second inclined surface located at the right side, and the cabinet includes a first inclined surface and a second inclined surface, each inclined surface extending upwardly adjacent and towards the back side, the first inclined surface located at the left side and the second inclined surface located at the right side.

4. The refrigeration cooler of claim 1, wherein the lower support surface includes a first rail extending along the left side and a second rail extending along the right side, each rail has a back end and a front end.

5. The refrigeration cooler of claim 4, wherein the first and second inclined surfaces of the cabinet extend upwardly from the back end of the respective first and second rail.

6. The refrigeration cooler of claim 1, wherein the lower side of the refrigeration unit includes a flat metal plate, with a downwardly extending lip at the front side, and the cabinet includes a bracket spanning across the front side of the cabinet, the bracket having a horizontal surface forming part of the lower support surface, and a downwardly extending lip at the front side, whereby with the refrigeration unit installed in the cabinet, the downwardly extending lip of the unit is in mating engagement with the downwardly extending lip of the cabinet.

7. The refrigeration cooler of claim 6, wherein the downwardly extending lips include openings aligned with one another for receiving a fastener for retaining the unit in the installed position.

8. The refrigeration cooler of claim 1, wherein the back side of the cabinet includes an abutment for defining the fully installed position of the unit within the compartment.

9. The refrigeration cooler of claim 1, wherein each surface includes an adjacent horizontal resting surface, wherein in the installed position, the unit rests upon the horizontal resting surfaces of the cabinet, and the horizontal resting surfaces of the unit support the unit in a spaced apart relation upon the lower side of the cabinet.

10. The refrigeration cooler of claim 1, wherein the refrigeration unit includes at least one handle to assist in sliding the unit into or out of the compartment.

11. The refrigeration cooler of claim 1, wherein the back side of the cabinet includes a vent, and a grill cover is secured to the refrigeration cooler to close off the compartment, whereby the vent and grill cover allow circulation to remove heat generated by the refrigeration unit.

12. The refrigeration cooler of claim 11, wherein the refrigeration unit includes a left wall, a right wall, and a cooling fan for directing ambient air to enter the refrigeration unit from the grill cover, through the refrigeration unit, and out of the refrigeration cooler via the vent, thereby cooling the refrigeration unit.

13. The refrigeration cooler of claim 1, wherein the seal includes a magnetic core.

14. A refrigeration unit compartment including a refrigerator unit comprising:

a refrigeration unit having a back side, a front side, lower side and an upper side, an inclined surface extending downwardly adjacent and towards the front side, the upper side includes a first set of an evaporator inlet opening and an evaporator cool air exhaust opening;

the refrigerator unit compartment includes an opening for receiving the refrigeration unit, a lower support surface and an upper surface, the lower support surface is adapted for receiving the refrigeration unit and includes an inclined surface extending upwardly adjacent and towards the back side, the upper surface includes a second set of an evaporator inlet opening and an evaporator cool air exhaust opening;

a seal secured around a perimeter of the evaporator inlet opening and the evaporator cool air exhaust opening of either the first set or the second set, whereby when the refrigeration unit is slid into the refrigerator unit compartment opening, along the lower support surface and below the upper surface, the seal is in an uncompressed state, and after further insertion into the refrigerator unit compartment, the back side of the refrigeration unit engages the inclined surface of the refrigerator unit compartment, and the front side of the refrigerator unit compartment engages the inclined surface of the refrigeration unit, causing the refrigeration unit to be lifted and thus compressing the seal so as to seal the first set of openings with the second set of openings.

15. The refrigeration unit compartment of claim 14, wherein the seal is secured around the perimeter of the first set of openings, whereby when the refrigeration unit is lifted within the refrigeration unit compartment, the seal is compressed against the upper surface of the refrigeration unit compartment.

16. The refrigeration unit compartment of claim 14, wherein the lower side of the refrigeration unit includes a first inclined surface and a second inclined surface, each inclined surface extending downwardly, adjacent and towards the front side, the first inclined surface located at the left side and the second inclined surface located at the right side, and the refrigeration unit compartment includes a first inclined surface and a second inclined surface, each inclined surface extending upwardly adjacent and towards the back side, the first inclined surface located at the left side and the second inclined surface located at the right side.

17. The refrigeration unit compartment of claim 14, wherein the lower support surface includes a first rail extending along the left side and a second rail extending along the right side, each rail has a back end and a front end.

18. The refrigeration unit compartment of claim 17, wherein the first and second inclined surfaces of the refrigeration unit compartment extend upwardly from the back end of the respective first and second rail.

19. The refrigeration unit compartment of claim 14, wherein the lower side of the refrigeration unit includes a flat metal plate, with a downwardly extending lip at the front side, and the refrigeration unit compartment includes a bracket spanning across the front side of the refrigeration unit compartment, the bracket having a horizontal surface forming part of the lower support surface, and a downwardly extending lip at the front side, whereby with the refrigeration unit installed in the refrigeration unit compartment, the downwardly extending lip of the refrigeration unit is in mating engagement with the downwardly extending lip of the refrigeration unit compartment.

20. The refrigeration unit compartment of claim 19, wherein the downwardly extending lips include openings aligned with one another for receiving a fastener for retaining the refrigeration unit in the installed position.

21. The refrigeration unit compartment of claim 14, wherein the back side of the refrigeration unit compartment includes an abutment for defining the fully installed position of the refrigeration unit within the refrigeration unit compartment.

22. The refrigeration unit compartment of claim 14, wherein each surface includes an adjacent horizontal resting surface, wherein in the installed position, the refrigeration unit rests upon the horizontal resting surfaces of the refrigeration unit compartment, and the horizontal resting surfaces of the refrigeration unit support the refrigeration unit in a spaced apart relation upon the lower side of the refrigeration unit compartment.

23. The refrigeration unit compartment of claim 14, wherein the refrigeration unit includes at least one handle to assist in sliding the refrigeration unit into or out of the refrigeration unit compartment.

24. The refrigeration unit compartment of claim 14, wherein the back side of the refrigeration unit compartment includes a vent, and a grill cover is secured to the refrigeration unit compartment to close off the refrigeration unit compartment, whereby the vent and grill cover allow circulation to remove heat generated by the refrigeration unit.

25. The refrigeration unit compartment of claim 24, wherein the refrigeration unit includes a left wall, a right wall, and a cooling fan for directing ambient air to enter the refrigeration unit

from the grill cover, through the refrigeration unit, and out of the refrigeration unit compartment via the vent, thereby cooling the refrigeration unit.

26. The refrigeration unit compartment of claim 14, wherein the seal includes a magnetic core.

27. The refrigeration unit compartment of claim 14, wherein the upper support surface engages a refrigeration cabinet

28. The refrigeration unit compartment of claim 27, wherein the refrigeration cabinet sits on the upper support surface of the refrigeration unit compartment so that the second set of evaporator inlet opening and evaporator cool air exhaust opening are not compromised or impeded.

29. A method of inserting a refrigeration unit into a refrigeration unit compartment comprising:

handling the refrigeration unit;

moving the refrigeration unit towards the refrigeration unit compartment;

fitting the refrigeration unit with the refrigeration unit compartment;

inserting the refrigeration unit into the refrigeration unit compartment;

engaging an incline portion of the refrigeration unit with an incline portion of the refrigeration unit compartment;

raising the refrigeration unit in the refrigeration unit compartment as the incline portions of the refrigeration unit and the refrigeration unit compartment, respectively, are engaged;

compressing a seal on the refrigeration unit as the refrigeration unit is raised in the refrigeration unit compartment;

raising the refrigeration unit in the refrigeration unit compartment until such time as the refrigeration unit can no longer be further inserted; and

securing the refrigeration unit in the refrigeration unit compartment.

30. The method of claim 29 further comprising providing a refrigeration unit with an upper side, which upper side includes a first evaporator inlet opening and an evaporator cool air exhaust opening.

31. The method of claim 30 further comprising providing a refrigeration unit compartment with an upper surface, which upper surface includes a second evaporator inlet opening and an evaporator cool air exhaust opening.

32. The method of claim 31 further comprising inserting and aligning the refrigeration unit in the refrigeration unit compartment until the respective evaporator inlet opening and evaporator cool air exhaust opening align.

33. The method of claim 29 further comprising providing the refrigeration unit compartment with a back side that mates with the inclined surface of the refrigeration unit compartment.

34. The method of claim 33 further comprising raising the refrigeration until the seal of the of the refrigeration unit engages and is compressed by the upper surface of the refrigeration unit compartment.

35. The method of claim 33 further comprising inserting the refrigeration unit until the seal of the refrigeration unit engages and is compressed by the upper surface of the refrigeration unit compartment.

36. The method of claim 33 further comprising inserting and raising the refrigeration unit until the seal of the refrigeration unit engages and is compressed by the upper surface of the refrigeration unit compartment.